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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,996	02/07/2001	Konstantinos I. Papathomas	END92000065US1	8725

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EXAMINER

SELLERS, ROBERT E

ART UNIT

PAPER NUMBER

1712

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/778,996

Applicant(s)

PAPATHOMAS, KONSTANTINOS
I.

Examiner

Robert Sellers

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 14, 18, 41, 43, 44, 46, 47, 51-54, 56-62, 75-78 and 80-95 is/are pending in the application.
- 4a) Of the above claim(s) 47, 56, 57, 80 and 81 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 14, 18, 41, 43, 44, 46, 51-54, 58-62, 75-78 and 82-95 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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Claim 47 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Claims 56, 57, 80 and 81 are withdrawn as being directed to non-elected species. The elections were made **without** traverse in the reply filed on October 6, 2005.

1. The flexibilizing blend of bis(2,3-epoxy-2-methylpropyl)ether as the first flexibilizer and poly(arylene ether) as the thermoplastic was elected in the response filed October 6, 2005 (page 2). Claims 56, 57, 80 and 81 are limited to single flexibilizing agents regardless of whether or not it is soluble or not. The election of a blend of flexibilizers is a distinct species from a single soluble or insoluble thermoplastic flexibilizing agent.

2. The identification of Triton X-100 as polyethylene glycol-p-tert-octylphenyl ether on page 22, line 23 of the specification and the replacement of the trade name with the chemical name in claims 91 and 97 properly defines the surfactant.

3. Papathomas et al. Patent No. 6,790,473 is withdrawn due to its application under 35 U.S.C. 103(a) within the confines of 102(e). The Remarks section of the amendment filed January 30, 2006 on page 22 states that the subject matter of Papathomas et al. and the claims "were, at the time the invention was made, owned by International Business Machines Corporation or subject to assignment by International Business Machines Corporation." Accordingly, the statement of common ownership as dictated by MPEP § 706.02(l)(2)II. eliminates Papathomas et al. as a reference.

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The text of sections 102(a) and 103(c) of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 18, 51-53, 59-62, 75-77 and 83-86 are rejected under 35 U.S.C. 102(e) as being anticipated by Shiobara et al. Patent No. 6,376,100.

The rejection is maintained for the reasons of record set forth in the non-Final rejection mailed November 7, 2005. The arguments filed January 30, 2006 have been considered but are unpersuasive.

4. Shiobara et al. in Examples 1-6 of Table 1 (cols. 15-16) shows formulations with the epoxy-functional organopolysiloxane stress reducing agent having viscosities of 85, 350, 360 and 380 poise which is less than Comparative Example 1 without the stress reducing agent.

5. Based on the equivalent underfills prepared from an epoxy resin, an epoxy-functional organopolysiloxane embraced by the claimed flexibilizer according to page 19, lines 23, 26-27 and 29-31, a spherical inorganic filler having a particle size of up to 50 microns of the prior art and claims, the underfill of Shiobara et al. inherently possesses the claimed higher fracture toughness and increased shock resistance as compared to a composition without the flexibilizing agent since these are inherent properties of a stress reducing agent.

Claims 1, 14, 18, 41, 43, 44, 46, 51-54, 58-62, 75-78, 82-88, 90-94 and 96-98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christie et al. Patent No. 5,668,059 and Johansson et al. Patent No. 6,090,474 in view of Shiobara et al. Patent No. 6,376,100.

Claims 89 and 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to the claims hereinabove, and further in view of CAPLUS accession no. 1997:713725 for the Materials Research Society Symposium Proceedings article by Shi et al.

The rejection is maintained for the reasons of record set forth in the non-Final rejection mailed November 7, 2005. The arguments filed January 30, 2006 have been considered but are unpersuasive.

6. Christie et al. acknowledges the imparting of thermal shock resistance and flexibility (whereof the claimed fracture toughness is a feature) upon the incorporation of a flexibilizer (col. 11, lines 14-19). A preferred species of flexibilizer is from about 5 to about 30 percent by weight of a polyol flexibilizer (col. 11, lines 29-30) within the realm of the claimed flexibilizing agent according to page 19, lines 16-21. Therefore, the encapsulant of Christie et al. containing from about 5 to about 30 percent by weight of polyol flexibilizer contributes the claimed thermal shock resistance and flexibility. The polyol inherently provides a decrease in viscosity since the polyols are liquid and would dilute the formulation.

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7. The flexibilizer of Johansson et al. inherently contributes a higher fracture toughness which is an inherent characteristic thereof. It would have been obvious to employ a particular flexibilizer such as the polyol of Christie et al. which imparts thermal shock resistance and a lower viscosity due to its liquid phase.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Sellers whose telephone number is (571) 272-1093. The examiner can normally be reached on Monday to Friday from 9:30 to 6:00. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

rs
2/2/2006



ROBERT E.L. SELLERS
PRIMARY EXAMINER